# *Craspedia uniflora* G.Forst. (Asteraceae) is a New Zealand endemic and not part of the Australian flora

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## Summary

Schmidt-Lebuhn, A.N. (2013). *Craspedia uniflora* G.Forst. (Asteraceae) is a New Zealand endemic and not part of the Australian flora. ***Austrobaileya* 9(1): 136–139.** Specimens identified as *Craspedia uniflora* from Australia in the Queensland Herbarium are shown to have been misidentified and this species should therefore be deleted from both the *Census of the Queensland Flora* and the *Australian Plant Census*. The absence of any Australian material of this species in Australian herbaria also indicates that *C. uniflora* is a New Zealand endemic. Four species of *Craspedia* are identified as occurring in Queensland, *C. canens* J.Everett & Doust, *C. haplorrhiza* J.Everett & Doust, *C. paludicola* J.Everett & Doust (syn. *C.* sp. (Girraween NP S.T.Blake 23643)) and *C. variabilis* J.Everett & Doust, and a key to these species is provided.

Key Words: Asteraceae, Compositae, Gnaphalieae, Australian Plant Census, Census of the Queensland Flora, *Craspedia*, *Craspedia canens*, *Craspedia haplorrhiza*, *Craspedia paludicola*, *Craspedia uniflora*, *Craspedia variabilis*, identification key

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## Introduction

*Craspedia* G.Forst. (Asteraceae, Gnaphalieae) is a genus of *c.* 20 Australian and at least 6 New Zealand species of mostly perennial rosette plants bearing yellow, white or orange flowers in solitary compound heads on leafy scapes. Although found in all states of Australia except the Northern Territory, *Craspedia* is most diverse in subalpine to alpine regions of the south-eastern mainland and Tasmania.

*Craspedia* was described by Forster (1786) with one species, *C. uniflora* G.Forst. from New Zealand. Over the following two hundred years, several other species were described from New Zealand and Tasmania but only one from the Australian mainland (see Schmidt-Lebuhn & Milner 2013 for an overview), so that mainland specimens were often haphazardly referred to species from New Zealand and Tasmania, especially *C. uniflora* and *C. glauca* (Labill.) Spreng. Curtis (1963) did not consider *C. uniflora* to occur in Tasmania, while Stanley & Ross (1986) used the name for all specimens of *Craspedia s.str.* in south-eastern Queensland (the other two species they treated under *Craspedia* are now assigned to *Pycnosorus* Benth. which is characterized by sessile partial heads, yellow phyllaries and pappus, and a different base chromosome number; Everett & Doust 1992a).

Recent taxonomic or floristic treatments of *Craspedia* in Tasmania and the Australian mainland did not mention the species (Everett & Doust 1992b, c; Everett & Thompson 1992; Everett 1999; Costin *et al.* 2000; Rozefelds 2002; McDougall & Walsh 2008; Rozefelds *et al.* 2011). Most Australian specimens formerly identified as *C. uniflora*, including all those at CANB/CBG, have been assigned to species described in these recent studies. However, *C. uniflora* is still listed in the latest *Census of the Queensland Flora* (Bostock & Holland 2010) and in the *Australian Plant Census* (CHAH 2011) as occurring in all states except the Northern Territory. No nationwide taxonomic treatment of *Craspedia* is currently available.

Ford *et al.* (2007) demonstrated that the New Zealand species of *Craspedia* form a monophyletic group nested in the Australian representatives of the genus and thus are likely to represent the descendants of a single long

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distance dispersal event with no subsequent re-colonization of Australia. Because the New Zealand lineage has diversified into at least six species since its arrival (Allan 1961), it appears *a priori* unlikely that a contemporary species such as *C. uniflora* would be found on both sides of the Tasman Sea.

In this paper the status of *Craspedia uniflora* in Australia is examined to clarify whether Australian specimens identified as this species were merely overlooked when the taxonomy of Australian *Craspedia* was updated or whether at least some of them are conspecific with those from New Zealand. A recent quantitative study of morphological characters in the genus aimed to include specimens from all formally described native Australian species (Schmidt-Lebuhn & Milner 2013), and it was therefore important to determine whether *C. uniflora* needed to be included.

## Materials and methods

All specimens labelled as *Craspedia uniflora* were requested as a loan from BRI, and a photograph of the type of the species was obtained from K. The morphology of the type as discernible from the photograph, the morphology of selected New Zealand specimens and the description of *C. uniflora* by Allan (1961) were compared against the morphology of Australian specimens previously identified as *C. uniflora* and the descriptions of and keys to Australian species (in particular Everett & Doust 1992a; Everett & Thompson 1992). The results of the quantitative analyses by Schmidt-Lebuhn & Milner (2013) were also taken into account.

Common abbreviations in the specimen citation include National Park (NP). All specimens have been seen unless indicated *n.v.*

## Results

As circumscribed by Allan (1961), *Craspedia uniflora* of New Zealand is a heterogeneous species of four varieties occurring from coastal rock crevices to subalpine herb-fields. It is characterized by a very distinctive margin of tangled long white hairs around the leaves but overall plant size, glomerule size and flower colour are variable (yellow or white in the latter case). Under the typical variety, the type specimen at K is described as having leaves obovate- to lanceolate-spathulate, *c.* 7 × 1.5 cm, scapes *c.* 12 cm long and glomerules of *c.* 1.5 cm diameter, values that are rather small for a *Craspedia*. Visual examination of the photograph of the type showed it to match this description, with the single glomerule *c.* 1.4 cm in diameter and the longest intact leaf *c.* 6 cm long. A very distinctive margin of white hairs around the rosette and scape leaves is clearly visible.

No Australian specimens of *Craspedia* are consistent with the above morphology and descriptions. The only native species of similar stature as the type of *C. uniflora* are *C. alba* J.Everett & Joy Thomps., *C. glabrata* (Hook.f.) Rozefelds and *C. rosulata* Rozefelds & A.M.Buchanan, but all of them differ from this species especially in regard to the indumentum. Whereas *Craspedia lamicola* J.Everett & Joy Thomps. has a margin of hairs superficially similar to that of *C. uniflora* around otherwise glabrous to subglabrous leaves it is a much more robust plant restricted to wet alpine habitats with significantly larger scapes, leaves and glomerules.

*Craspedia* specimens from Queensland previously identified as *C. uniflora* were referable to *C. canens* J.Everett & Doust, *C. haplorrhiza* J.Everett & Doust, *C. paludicola* J.Everett & Doust and *C. variabilis* J.Everett & Doust. The species of *Craspedia* in Queensland can be determined with the following key, with the caveats that more work is needed to understand the circumscription and taxonomy of what is currently called *C. canens* and that *C. variabilis* may ultimately turn out to be a synonym of Tasmanian *C. glauca*. (Schmidt-Lebuhn & Milner 2013).

## Key for the identification of *Craspedia* species that occur in Queensland

1 Plants short-lived, with a single tap-root . . . . . . . . . . . . . . . . . . . **2. C. haplorrhiza**
1. Plants perennial, with numerous secondary roots . . . . . . . . . . . . . . . . . . . . . . . . **2**

2 Tall plants up to 75 cm, with subglabrous to glabrous leaves, growing in swamps or drainage lines . . . . . . . . . . . . . . . . . . . . . . . . . . . . **3. C. paludicola**
2. Smaller plants usually only to 50 cm, with hairy leaves, growing in drier habitats . . . . . **3**

3 Leaves with woolly indumentum . . . . . . . . . . . . . . . . . . . . . . . . . . . **1. C. canens**
3. Leaves with robust septate indumentum and often with glands but not woolly . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . **4. C. variabilis**

## Taxonomy

**1. Craspedia canens** J.Everett & Doust, *Telopea* 5: 37 (1992). **Type:** New South Wales. Central Tablelands: Wingecarribee [Wingicarribee] Swamp, 26 October 1971, *L.A. Craven 1981* (holo: NSW 221409 *n.v.*; iso: CANB; L *n.v.*).

*Additional specimens examined*: **Queensland.** Darling Downs District: Stanthorpe, Feb 1916, *Wright s.n.* (BRI [AQ247074]); Stanthorpe, *s.dat.*, *Davidson s.n.* (BRI [AQ247073, 247077]); “The Junction track”, Girraween NP, Oct 1974, *McDonald 467* (BRI); **Victoria.** Port Phillip, *s.dat.*, *Mossman 321* (BRI).

*Note*: *Mossman 321* is very small and glabrescent, showing few of the diagnostic woolly hairs.

**2. Craspedia haplorrhiza** J.Everett & Doust, *Telopea* 5: 37 (1992). **Type:** New South Wales. Far South Western Plains: southern crossroad, north of Ranger’s Station, Kinchega National Park, 12 September 1989, *A. Denham 39* (holo: NSW *n.v.*; iso: AD *n.v.*).

*Specimens examined*: **Queensland.** Darling Downs District: 10 miles [16.6 km] SE of St George, Aug 1947, *Everist 3137* (BRI); **New South Wales.** *c.* 56 km S of Walgett, Lightning Ridge/Angledoon Road, Sep 1989, *White s.n.* (BRI [AQ504366]).

**3. Craspedia paludicola** J.Everett & Doust, *Telopea* 5: 35 (1992). **Type:** Victoria. Top End Reference Area Barmah State Park, Murray Valley Study Area Sector: F, sub-block: 41B, 28 September 1985, *A.C. Beauglehole 81321* (holo: MEL 681491 *n.v.*; iso: CANB; HO *n.v.*, NSW *n.v.*).

*Craspedia* sp. (Girraween NP S.T.Blake 23643), **synon. nov.** (Bostock & Holland 2007, 2010).

*Additional specimens examined*: **Queensland.** Darling Downs District: About 7 miles [11 km] E of Wyberba, Oct 1958, *Pedley 297* (BRI); Girraween NP near Wyberba and Wallangarra, Nov 1971, *Blake 23643* (BRI); Racecourse Creek, Dingo Swamp, Girraween NP, Aug 1995, *Forster PIF17626* (BRI, CANB).

*Notes:* The loan made available by BRI also included several additional specimens not previously identified as *C. uniflora*, among them three sheets of the undescribed phrase name taxon *Craspedia* sp. (Girraween NP S.T.Blake 23643) (Bostock & Holland 2007, 2010; CHAH 2011). They do not differ in any significant way from *C. paludicola* J.Everett & Doust, especially considering the morphological variability of the latter species over its range on both sides of the Bass Strait. Although *Pedley 297* is an unusually small plant, its glabrous leaves and the habitat are typical of *C. paludicola*.

**4. Craspedia variabilis** J.Everett & Doust, *Telopea* 5: 36 (1992). **Type:** South Australia. South Eastern Region: *c.* 15 km south-east of Mt Burr Township, 7 September 1966, *I.B. Wilson 511* (holo: AD *n.v.*; iso: CANB).

*Additional specimens examined*: **Western Australia.** Mundaring Weir, Aug 1926, *Bick s.n.* (BRI [AQ247068]); Dalyup, 30 miles [50 km] W of Esperance, Sep 1971, *Scarth-Johnson 820* (BRI). **Queensland.** Darling Downs District: Cons Plain, NE of Killarney, Oct 2000, *Bean 16897* (BRI); Killarney, Sep 1937, *Schindler 5* (BRI). Moreton District: turnstile gate above Grace’s Hut, near Mt Barney, *s.dat.*, *Leiper s.n.* (BRI [AQ584399]). **New South Wales.** 7.4 km along Cochrane Road, Carrai NP, W of Kempsey, Dec 2007, *Bean 27170* (BRI, CANB). **Victoria.** Melbourne, *sine coll. s.n.* (BRI [AQ247063]). **South Australia.** Near Kapunda, in 1888, *Bailey s.n.* (BRI [AQ247062]); Eyre Peninsula Region, Marble Range, slopes of North Block, Sep 1979, *Weber 6018* (BRI).

## Discussion

No Australian specimen previously labelled as *C. uniflora* was found to be consistent with the type or with descriptions (Allan 1961) and herbarium vouchers from New Zealand. *Craspedia uniflora* therefore is endemic to New Zealand, and the name should be removed from the *Census of the Queensland Flora* and the *Australian Plant Census*.

This study shows that four species of *Craspedia s.str.* occur in Queensland: *C. canens*, *C. haplorrhiza*, *C. paludicola* and *C. variabilis*. *Craspedia haplorrhiza* is a widespread species of the western slopes and the margin of the arid zone, occurring in Queensland south from St George to around Bourke, Brewarrina and Walgett in New South Wales. The distribution of the other three species in the state is restricted to small areas in its south-eastern corner. *Craspedia paludicola* is known only from Girraween National Park, and *C. canens* from the same National Park and from some historical collections labelled as 'Stanthorpe'.

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